NOTE:

Provide the project title, name of organization conducting the project, and personnel with approval authority. Approval authorities typically include project organization and regulating authorities such as EPA.

Quality Assurance Project Plan
for
<< Project Name >>
<<Affiliated Program & Associated Contract or Assistance Agreement Number>>

Prepared by
<< Tribe Name and Address >>

Prepared for
<< Regional EPA Office and Address >>

Approvals Signature (required prior to project start):

_____ Date: _____
Tribal Council Elder

_____ Date: _____
Tribe=s Project Manager

_____ Date: _____
Tribe=s QA Officer

_____ Date: _____
EPA Project Manager/Officer

_____ Date: _____
EPA QA Manager/Representative

Table of Contents

NOTE:

List the section/subsections of the document and all figures, tables, and appendices. Provide associated section/subsection numbers and pages so that all information may be readily found in the document.

1.0 PROJECT MANAGEMENT

1.1 Title and Approval Page (EPA QA/R-5 A1) - See page 1.

1.2 Table of Contents (EPA QA/R-5 A2) - See pages 2 - 4.

1.3 Distribution List (EPA QA/R-5 A3)

NOTE:

List all the individuals (along with their titles, organizations, and contact information) who will receive original copies of the approved Quality Assurance Project Plan (QAPP) and any subsequent revisions. Include all persons who are responsible for project implementation (including project managers, QA managers, and representatives of all groups/agencies involved).

Below is an example outline of how you may present the information for this section. Please revise/edit the information, as appropriate, for your project team.

Name:
Title:
Organization:
Contact Information (Address, Telephone, E-mail, etc.).:

Name:
Title:
Organization:
Contact Information (Address, Telephone, E-mail, etc.):

Name:
Title:
Organization:
Contact Information (Address, Telephone, E-mail, etc.):

Name:
Title:
Organization:
Contact Information (Address, Telephone, E-mail, etc.):

Name:
Title:
Organization:
Contact Information (Address, Telephone, E-mail, etc.):

1.4 Project Organization (EPA QA/R-5 A4)

NOTE:

Identify the individuals and organizations participating in the project, and discuss their specific roles and responsibilities. Include program or project management, personnel responsible for conducting project activities, the project QA manager, and points of contact and associated organizations for all consultants, contractors, and/or laboratories. If associated names and contact information are not identified elsewhere, provide them here. Whenever possible (depending on the size of the organization), ensure that the project QA manager is independent of the staff generating the data.

Provide a concise organization chart (as Figure 1-1) showing the relationships and lines of authority/ communication for all named people and organizations.

Below is some example language to consider including. Please revise/edit the information, as appropriate, and ensure the name of the individual associated with each title is presented.

Tribal Project Manager will be the responsible official for this project overseeing the overall project and budget, as well as tasking contractors with work required to complete this project. He/she will communicate project needs to the contractor=s project manager.

Tribal QA Manager or Designee will be responsible for reviewing and approving the QA Project Plan. He/she may provide technical input on proposed sampling design, analytical methodologies, and data review. He/she may assist with coordinating laboratory services.

Contractor (or Grantee) Project Manager will have overall responsibility for assigning appropriate personnel to complete the tasks included in this plan. He/she will ensure that the project budget is adhered to. He/she will communicate with the Tribal Project Manager on work accomplished in this plan and any problems or deviations that need to be resolved.

Tribal (or Contractor/Grantee) Field Sampling Lead will be responsible for assigning field samplers their specific tasks and objectives. He/she have overall responsibility for all field activities. He/she will report to the Contractor Project Manager.

Contract Laboratory Lead or Contact will be responsible for assigning appropriate laboratory staff to perform the analyses specified in this plan.

Other Key Project Positions -

See Figure 1-1. Organization Chart

1.5 Problem Definition/Background (EPA QA/R-5 A5)

NOTE:

State the specific environmental problem to be investigated. Include sufficient background information to provide an historical and scientific perspective for the current project.

1.6 Project/Task Description and Schedule (EPA QA/R-5 A6)

NOTE:

Provide a summary of the work to be detailed in the remaining sections of this QAPP and the schedule for implementation. Include a general overview of the various pertinent work activities (such as: field activities & sampling, types and locations of samples to be collected, measurements/analyses, data evaluation, etc.), products/reports to be generated, and a targeted schedule for each activity/report (including time-line from QAPP development through final report writing).

1.7 Quality Objectives and Criteria for Measurement Data (EPA QA/R-5 A7)

NOTE:

Describe the general objectives of the project, identify the targeted action limits/level, and define the associated data quality acceptance criteria/measurement performance criteria.

This is a very important and often complicated section of the document to develop. Please read through Section 1.7, as well as Appendices A through C, of the Guidance provided in Module 1 for further assistance.

1.7.1 Objectives and Project Decisions

<< Include statement(s) of the general objectives and demonstrate knowledge of the overarching purpose for the project. Phrase decisions in terms of "…if…then…" type of statements. >>

1.7.2 Action Limits/Levels

<< Provide action limits/levels to help decision makers target a course of action, as well as to support selection of analytical operations and field measurements. See Table 1-1 as a recommended option for summarizing much of the information needed for analytical operations.>>

See Table 1-1. Analytical Parameters and Target Limits

1.7.3 Measurement Performance Criteria/Acceptance Criteria

<< Describe the data quality needed to support project decisions. Discuss the data quality indicators (DQIs) and the acceptance criteria/measurement performance criteria for each DQI, and identify the quality control (QC) or other mechanism to be used to assess if the criteria were met. See Tables 2-4 and 2-5 as recommended options for summarizing some of the information needed for analyses and field measurements, respectively. >>

See Table 2-4. Quality Control Requirements for Analyses
See Table 2.5. Quality Control Requirements for Field Measurements

1.8 Special Training Requirements/Certification (EPA QA/R-5 A8)

NOTE:
Identify and describe any specialized training or certification requirements. Discuss how such training will be provided, as well as how and where the training records will be documented.

1.9 Documents and Records (EPA QA/R-5 A9)

NOTE:
Describe the process for distributing the most current approved QAPP, as well as any revisions/updates, to appropriate project staff.

Summarize the type of information necessary to be included in laboratory data report packages, including electronic data deliverables (if needed).

Identify any other project records to be maintained, how/where the records will be stored, and the length of time of storage. This may include information generated in the field (e.g., field forms, well development & sampling logs, field log books, chain-of-custody forms, etc.), assessment/oversight reports, interim progress/status reports, final reports, etc.

Describe the type of information to be included in the final reports (for example: perhaps it will be summarized in a data base and/or Excel spreadsheet with all supporting information to be retained in a project file).

1.9.1 QA Project Plan Distribution

1.9.2 Field Documentation and Records

1.9.3 Laboratory Documentation and Records

1.9.4 Quarterly and/or Final Reports

2.0 DATA GENERATION AND ACQUISITION

2.1 Sampling Design (Experimental Design) (EPA QA/R-5 B1)

NOTE:

Describe the overall design of the project's data collection activities. Include maps depicting sampling locations (as Figure 2-1).

Provide rationale for the design and selection of sampling locations, measurements/analytical parameters, matrix/media to be sampled, etc. and any supporting assumptions. See Table 2-1 as a recommended option for summarizing much of the information needed.

Summarize the types and frequency of matrix/media to be sampled for each measurement/analytical parameter, types of samples (grab or composite), along with the associated QC samples to be collected in the field. See Table 2-2 as a recommended option for summarizing much of the information needed, as well as indicating the relationship between the # of field samples and various types of QC samples.

See Figure 2-1. Site Map with Sampling Locations

See Table 2-1. Sampling Design and Rationale

See Table 2-2. Summary of Field and QC Samples To Be Collected

2.2 Sampling Methods (EPA QA/R-5 B2)

NOTE:

Describe the procedures for collecting field samples, as well as the associated field QC samples. Identify the sampling methods and equipment.

Describe the process for preparing and decontaminating sampling equipment (including disposing of decontamination fluids).

Identify the sample containers (number, type, and size), preservation methods, and maximum holding times for each sample matrix/media and analysis. See Table 2-3 as a recommended option for summarizing some of the information needed.

(Note: If information is available in standard operation procedures (SOPs), include these in the appendices. If the SOPs provide options, ensure that the option(s) selected for the current project are identified in the text.)

See Table 2-3. Analytical Method, Containers, Preservation, and Holding Times Requirements

2.3 Sample Handling and Custody (EPA QA/R-5 B3)

NOTE:

Describe the sample handling and custody procedures in the field, during transport, and through receipt at the laboratory.

Include examples of sample labels, chain-of-custody forms, and sample custody logs. (Note: These could be provided with the information in Appendix A. Field Documentation.)

Describe procedures for packing samples for transfer/shipment.

(Note: If information is available in standard operation procedures (SOPs), include these in the appendices. If these documents provide options, ensure that the option(s) selected for the current project is identified in the QA Project Plan text and is clearly understood by all necessary project and laboratory personnel.)

2.4 Analytical Methods (EPA QA/R-5 B4)

NOTE:

Identify the analytical methods (including field measurements, field analyses, and laboratory analyses) and equipment required. Include sample preparation and/or extraction methods and waste disposal requirements (if any).

See Table 2-3 as a recommended option for summarizing the information needed.

(Note: If information is available in standard operation procedures (SOPs) and/or laboratory QA Manuals, include these in the appendices. If these documents provide options, ensure that the option(s) selected for the current project is identified in the QAPP text and is clearly understood by all necessary project and laboratory personnel.)

2.4.1 Field Measurements Methods

<< Include on-site measurements such as dissolved oxygen, turbidity, pH, etc. that provide supporting information. >>

2.4.2 Field Analyses Methods

2.4.2.1 Screening

<< Include on-site analyses to focus future sampling and/or analysis activities but not used to make definitive decisions for the project. May include analyses such as PCBs by immunoassay test kit, select metals by XRF, etc. >>

2.4.2.2 Definitive

<< Include on-site analyses that may provide data of equivalent quality as off-site laboratory analysis. May include field GC analyses, as well as analysis of PCBs by immunoassay test kit, select metals by XRF, etc. that are supported by confirmatory off-site laboratory analysis. >>

2.4.3 Laboratory Analyses Methods (Off-Site)

<< Include off-site analyses conducted at a contracted or Tribe-owned laboratory. >>

See Table 2-3. Analytical Method, Containers, Preservation, and Holding Times Requirements

2.5 Quality Control Requirements (EPA QA/R-5 B5)

NOTE:

Identify the required QC checks for both the field sampling methods (discussed in Section 2.2) and measurements/analyses (discussed in Section 2.4). State the frequency for each type of QC check, the acceptance criteria for each C check, as well as the associated corrective action if the acceptance criteria are not met. See Tables 2-4 and 2-5 as recommended options to consider for summarizing much of the information needed for analyses and field measurements, respectively.

(Note: If information is available in standard operation procedures (SOPs) and/or laboratory QA Manuals, include these in the appendices. If these documents provide options, ensure that the option(s) selected for the current project is identified in the QAPP text and is clearly understood by all necessary project and laboratory personnel. AND, be sure the information pertinent to the QC checks are summarized in the QAPP.)

See Table 2-4. Quality Control Requirements for Analyses
See Table 2-5. Quality Control Requirements for Field Measurements

2.5.1 Field Sampling Quality Control

2.5.2 Field Measurement/Analysis Quality Control

2.5.2.1 Field Measurement QC

2.5.2.2 Field Analysis QC (Screening and Definitive)

2.5.3 Laboratory Analysis Quality Control

2.6 Instrument/Equipment Testing, Inspection, and Maintenance (EPA QA/R-5 B6)

NOTE:

Identify all tools, gauges, test equipment, instruments, etc. (for both field and laboratory) that need periodic maintenance, testing, or inspection.

Describe how inspections and acceptance testing of environmental sampling and measurement systems and their components will be performed and documented.

Describe or reference how periodic preventive and corrective maintenance of measurement or test equipment will be performed. Identify the equipment and/or systems requiring periodic maintenance.

See Table 2-6 as a recommended option to consider for summarizing much of the information needed.

(Note: If information is available in standard operation procedures (SOPs), field equipment/instrument manuals, and/or laboratory QA Manuals, include these in the appendices. If these documents provide options, ensure that the option(s) selected for the current project is identified in the QAPP text and is clearly understood by all necessary project and laboratory personnel.)

See Table 2-6. Field Equipment/Instrument Calibration, Maintenance, Testing, and Inspection

2.6.1 Field Measurement Instruments/Equipment

<< This information may be included in the instrument/equipment manuals that could be provided in an appendix/attachment and referenced in the text. >>

2.6.2 Field Instruments/Equipment (Screening and Definitive)

<< This information may be included in the instrument/equipment manuals that could be provided in an appendix/attachment and referenced in the text. >>

2.6.3 Laboratory Analysis Instruments/Equipment (Off-Site)

<< This information may be include in a Laboratory QA Manual or SOP that could be provided in an appendix/attachment and referenced in the text. >>

2.7 Instrument/Equipment Calibration and Frequency (EPA QA/R-5 B7)

NOTE:

Identify all tools, gauges, test equipment, instruments, etc. (for both field and laboratory) that need to be calibrated.

Describe how calibration of these items will be performed and documented.

See (previous) Table 2-6 as a recommended option to consider for summarizing much of the information needed for Subsections 2.7.1 and 2.7.2. If information is included elsewhere in an attachment, you may choose to reference it.

(Note: If information is available in standard operation procedures (SOPs), field equipment/instrument manuals, and/or laboratory QA Manuals, include these in the appendices. If these documents provide options, ensure that the option(s) selected for the current project is identified in the QAPP text and is clearly understood by all necessary project and laboratory personnel.)

2.7.1 Field Measurement Instruments/Equipment

<< This information may be included in the instrument/equipment manuals that could be provided in an appendix/attachment and referenced in the text. >>

See Table 2-6. Field Equipment/Instrument Calibration, Maintenance, Testing, and Inspection

2.7.2 Field Instruments/Equipment (Screening and Definitive)

<< This information may be included in the instrument/equipment manuals that could be provided in an appendix/attachment and referenced in the text. >>

See Table 2-6. Field Equipment/Instrument Calibration, Maintenance, Testing, and Inspection

2.7.3 Laboratory Analysis Instruments/Equipment (Off-Site)

<< This information may be include in a Laboratory QA Manual or SOP that could be provided in an appendix/attachment and referenced in the text. >>

2.8 Inspection/Acceptance Requirements for Supplies and Consumables (EPA QA/R-5 B8)

NOTE:

List the critical supplies and consumables. (Note: ACritical@ refers to those items that may directly or indirectly affect the quality of the results, typically through contact.)

Describe how and by whom supplies and consumables will be inspected and accepted for use for the project, and state the associated acceptance criteria for each.

(Note: If information is available in standard operation procedures (SOPs), field equipment/instrument manuals, and/or laboratory QA Manuals, include these in the appendices. If these documents provide options, ensure that the option(s) selected for the current project is identified in the QAPP text and is clearly understood by all necessary project and laboratory personnel.)

2.8.1 Field Sampling Supplies and Consumables

<< This information may be included in the SOPs that could be provided in an appendix/attachment and referenced in the text. >>

2.8.2 Field Measurement/Analyses (Screening and Definitive) Supplies and Consumables

<< This information may be included in the instrument/equipment manuals or SOPs that could be provided in an appendix/attachment and referenced in the text. >>

2.8.3 Laboratory Analyses (Off-Site) Supplies and Consumables

<< This information may be include in a Laboratory QA Manual or SOP that could be provided in an appendix/attachment and referenced in the text. >>

2.9 Data Acquisition Requirements (Non-Direct Measurements) (EPA QA/R-5 B9)

NOTE:

Identify any types of data needed (for project implementation or decision making) that are obtained from non-direct measurement sources such as existing data from another project, photographs and maps, literature files, and historical databases.

Describe the purpose for the original collection of the data, and indicate its relevance to this project.

Discuss how you intend to use the data. Describe how you will determine if the data is of acceptable quality for the current project and/or if there are any limitations on its use.

2.10 Data Management (EPA QA/R-5 B10)

NOTE:

Describe how the data will be managed, tracing the path of data generation in the field or laboratory to final use or storage.

Describe or reference the standard record-keeping procedures, and discuss the approach to be used for data storage and retrieval of electronic media.

Discuss the plan for detecting and correcting errors, as well as for preventing loss of data during reduction, reporting, and entry to forms, reports, and databases.

Identify and describe all data handling equipment and procedures to process, compile, and analyze the data, including any required computer hardware and software. Address any specific performance requirements and describe the procedures that will be followed to demonstrate acceptability of the hardware/software configuration required.

Identify who is responsible for each data management task.

3.0 ASSESSMENT AND OVERSIGHT

3.1 Assessments/Oversight and Response Actions (EPA QA/R-5 C1)

NOTE:

Describe the assessments to be performed Aduring@ the project to ensure activities are being conducted as planned. State the frequency and purpose of each assessment, along with the success/acceptance criteria for each assessment proposed. List the approximate schedule of activities, and identify potential organizations and participants.

Define the scope of authority of the assessors, including stop work orders. Discuss how response actions to non-conforming conditions shall be addressed and by whom. Define the conditions under which the assessors are authorized to act.

Describe how and to whom the results of the assessments shall be reported.

Provide examples of any forms or checklists to be used to document assessment and response/corrective action activities in an appendix/attachment.

3.2 Reports to Management (EPA QA/R-5 C2)

NOTE:
Identify the frequency and distribution of reports issued to inform management of the status of the project, results of performance evaluations and systems assessments, results of data quality evaluations, and any significant quality assurance problems and recommended solutions.

Identify the preparer and the recipients of the reports, and any specific actions management is expected to take as a result of the reports.

4.0 DATA REVIEW AND USABILITY

4.1 Data Review, Verification, and Validation Requirements (EPA QA/R-5 D1)

NOTE:
State the criteria used to review and evaluate/validate data.

4.2 Verification and Validation Methods (EPA QA/R-5 D2)

NOTE:
Describe the methods or procedures to be used for verifying and validating data, as well as documenting the process. Describe how accepted, qualified, and rejected data will be identified. Include data qualifiers if appropriate.

Discuss how issues shall be resolved and identify the authorities for resolving such issues.

Provide examples of any forms or checklists to be used in an appendix/attachment. (Note: These could be provided in Appendix C-1. Data Evaluation/Documentation Form.) All associated criteria identified in the documentation should be consistent with and/or supportive of the quality control objectives described in Section 2.5.

4.3 Reconciliation with User Requirements (EPA QA/R-5 D3)

NOTE:

Describe how the sample results (which have already been reviewed, verified, and validated/evaluated) obtained from the project will be reconciled with the project objectives and measurement performance criteria/acceptance criteria presented in Section 1.7 and/or 2.5.

Outline the proposed methods to analyze the data and determine possible anomalies or limitations on the use for the intended purpose.

Describe how data anomalies will be resolved, and discuss how limitations on the use of the data will be reported to decision makers.

5.0 REFERENCES

1. << Cited Reference #1 >>
2. << Cited Reference #2 >>
3. << Others >>

FIGURES:

Figure 1-1. Organization Chart

<< add >>

Figure 2-1. Site Map with Sampling Locations

<< add >>

TABLES:

Table 1-1. Analytical Parameters and Target Limits

Matrix/Media:

Analytical Parameter[1]	Project Action Limit/Level (applicable units)	Laboratory Limits[2] (applicable units)	
		Quantitation Limits	Detection Limits (if appropriate)

[1] Analytical parameters include both field and laboratory analyses.
[2] Laboratory quantitation limits and detection limits are those that an individual laboratory or organization is able to achieve for a given analysis on a routine basis.
C Quantitation limits are the minimum concentrations that can be identified and quantified above the detection limit within some known limits of precision and accuracy/bias. It is recommended that the quantitation limit is supported by the analysis of a standard of equivalent concentration (typically, the lowest calibration standard).
C Detection limits are the minimum concentration that can be detected above background or baseline/signal noise of an instrument.

Table 2-1. Sampling Design and Rationale

Sampling Location/ID Number	Matrix/ Media	Depth (Appropriate Units)	Analytical Parameter[1]	Rationale for Sampling Design[2]

[1] Analytical parameters include all planned field measurements (e.g., dissolved oxygen, turbidity, pH, etc.), field screening analysis (e.g., PCBs by immunoassay test kit, selected metals by XRF), and laboratory analyses.
[2] Rationale supports the selection of sampling locations and associated analytical parameters.

Table 2-2. Summary of Field and QC Samples To Be Collected

Matrix/ Media	Analytical Parameter[1]	No. of Sampling Locations	Depth[2] (surface, mid, or deep)	No. of Field Duplicates	Organic Analyses[3] No. of:		Inorganic Analyses[3] No. of:		No. of Trip Blanks (for VOCs only)	No. of Equipment Blanks	No. of PE Samples[4]	Total No. of Samples
					MS	MSD	Dup	MS				
LABORATORY ANALYSES:												
FIELD ANALYSES:												
FIELD MEASUREMENTS:												

[1] Analytical parameters include all laboratory analyses, field analyses (e.g., nutrients by various field test kits, PCBs by immunoassay test kit, select metals by XRF, etc.), and field measurements (e.g., dissolved oxygen, turbidity, pH, etc.).
[2] When samples are collected at different depths at the same location, information for each depth category (e.g., surface, mid, or deep/bottom) is provided on a separate line.
[3] Information includes the number of associated analytical QC samples, if collection of additional sample volume and/or bottles is necessary. If the QC samples listed are part of the analysis and don't require the collection of additional sample volume and/or bottles, ANA@ (for Ano additional sample@) is included in the column. (Note: MS=matrix spike, MSD=matrix spike duplicate, Dup=laboratory duplicate/replicate.)
[4] PE or Performance will be submitted for laboratory analysis along with the associated field sampled where noted.

Table 2-3. Analytical Method, Containers, Preservation, and Holding Times Requirements

Matrix/Media:

Analytical Parameter[1] and/or Field Measurements[2]	Analytical Method Number	Containers (number, size/volume, type)	Preservation Requirements (chemical, temperature, light protection)	Maximum Holding Times[3]
ANALYTICAL PARAMETER:				
FIELD MEASUREMENTS:				

[1] Analytical parameter includes both field and laboratory analyses.
[2] Field measurement parameters include those parameters measured directly in the field (e.g., dissolved oxygen, turbidity, pH, etc.).
[3] Maximum holding times include all pertinent holding times for each analytical parameter (e.g., from sample collection to sample preparation, from sample preparation to analysis, from sample collection to analysis, etc.) and field measurement (e.g., from sample collection to measurement).

Table 2-4. Quality Control Requirements for Analyses

(<<Matrix>> for Analyses of <<Type of Analyses>>)

Analytical Method/SOP:

QC Sample:	Data Quality Indicator (DQI)	Frequency/ Number	Method/SOP QC Acceptance Limits	Acceptance Criteria/ Measurement Performance Criteria[1]	Corrective Action
LABORATORY ANALYSIS:					
FIELD ANALYSIS:					

[1] Information supports the acceptance criteria/measurement performance criteria introduced in Section 1.7.3.

Table 2-5. Quality Control Requirements for Field Measurements

(<<Matrix>> for Field Measurements of <<Type of Parameters>>)

Field Parameter:

QC Sample:	Data Quality Indicator (DQI)	Frequency/ Number	Method/SOP QC Acceptance Limits	Acceptance Criteria/ Measurement Performance Criteria[1]	Corrective Action
<<PARAMETER 1 – Instrument Name (Manufacturer, Model)>>					
<<PARAMETER 2 – Instrument Name (Manufacturer, Model)>>					
<<PARAMETER 3 – Instrument Name (Manufacturer, Model)>>					

[1] Information supports the acceptance criteria/measurement performance criteria introduced in Section 1.7.3.

Table 2-6. Field Equipment/Instrument Calibration, Maintenance, Testing, and Inspection

Analytical Parameter	Field Equipment/ Instrument	Calibration Activity	Maintenance Activity	Testing/ Inspection Activity	Frequency	Acceptance Criteria	Corrective Action

APPENDICES

APPENDIX A. Field Documentation

A-1. Equipment/Instrument Manual
A-2. Standard Operating Procedures
A-3. Field Data Forms

APPENDIX B. Laboratory Documentation

B-1. QA Manual
B-2. Standard Operating Procedures
B-3. Data Report Format

APPENDIX C. Data Evaluation

C-1. Data Evaluation/Documentation Form

APPENDIX A

Field Documentation

Appendix A-1.
Equipment/Instrument Manual

Appendix A-2.
Standard Operating Procedures

Appendix A-3.
Field Data Forms
and
Chain-of-Custody Documentation

APPENDIX B

Laboratory Documentation

Appendix B-1.
QA Manual

Appendix B-2.
Standard Operating Procedures

Appendix B-3.
Data Report Forms

APPENDIX C

Data Evaluation

Appendix C-1.
Data Evaluation/Documentation Form